

quite ragged or even disintegrated; copulatory organ of the male sinuate on the sides before the slightly widened apex.

Black, thorax often more or less rufous, penis cleft for half its length.....*rugosipennis*

Brownish ferruginous, penis cleft for distinctly less than half its length.....*sobrina*

Elytral vittae even and regular, nearly as in *10-lineata*; copulatory organ of male tapering gradually from base to apex.....*crinita*

7. Form more narrow and cylindrical, elytral vittae somewhat uneven.....*arguta*

Form broader and less cylindrical, elytral vittae regular and clean cut (except *variolosa*)..... 8

8. Head with fine erect hairs in addition to the scaly vestiture..... 9

Head devoid of erect hairs..... 10

9. The short line of white scales behind the humeral umbo disconnectedly continued posteriorly; scales of pygidium broader, the erect hairs longer; size very large, color typically brownish castaneous, penis divided for less than half its length, the sides subparallel apically.....*speciosa*

The short line of white scales behind the humeral umbo not disconnectedly prolonged backward; pygidium with narrower lanceolate scales and shorter erect hairs; penis gradually narrowed from base to apex and divided for half its length.....*10-lineata*

10. Clypeal margin bisinuate, thoracic vestiture squamiform, elytra with regular sharply defined white vittae.....*matrona*

Clypeal margin arcuate, the lateral angles rounded; thoracic vestiture hair-like..... 11

11. Elytra with white vittae.....*occidentalis*

Elytra with irregular blotches of whitish squamiform hairs, which sometimes show a partially linear arrangement.

Form narrower, antennal club of male not much longer than the head.....*variolosa*

Form broader, antennal club of male longer.....*comes*

TWO UNDESCRIBED APHELINID SCALE PARASITES FROM DELAWARE (APHELINIDAE: HYMENOPTERA).

By H. L. DOZIER, *Entomologist, Delaware Agricultural Experiment Station.*

As almost all of the coccid parasites are of more or less economic importance it is interesting to record the following two undescribed species. One of these is a primary parasite of a scale which is very injurious at times and the other represents an *Azotus*, a genus which is here reported for the first time from the New World, and whose members appear to be more tropical in distribution having been described from France, Spain, Africa and Australia.

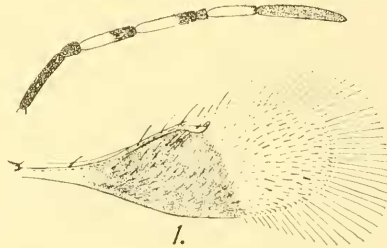
Azotus americanus, new species.

Nearest to *marchali* and *semifuscipennis* both of which have the forewings with infuscation from base to stigmal vein but differing distinctly in coloration of antennae and other details.

Male.—General color brownish-black. Antennae brownish, the basal half of funicle joints one and two and the entire fourth joint whitish. Legs brown except the knees and distal ends of tibiae which are whitish. Forewings hyaline, the basal half uniformly infuscated except just before the base.

Head as wide as thorax, eyes prominent. Antennae filiform, seven-jointed, there being no division of the club into two segments; scape long and rather slender, pedicel short, first and second funicle joints sub-equal in width and length and very slightly longer than the fourth; third funicle joint extremely short, about as broad as long; club composed of a single joint which is about twice as long as the last funicle joint. Marginal cilia of forewings rather long, distinctly longest along the outer, lower margin. Body and appendages appear distinctly reticulated under high power of microscope. All tarsi five-jointed.

Length .50 mm.; expanse, exclusive of cilia, 1.22 mm.; greatest width of forewings 0.18 mm.



AZOTUS AMERICANUS.

Fig. 1.—Antenna and forewing of male *Azotus americanus* Dozier, greatly enlarged.

Described from two males mounted separately on slides in balsam, reared by the writer from branches of *Sorbaria stellipila*, heavily infested with the San Jose scale, *Aspidiotus perniciosus* at Newark, Delaware, March 26, 1927. On these branches were also a few specimens of *Lepidosaphes ulmi* and *Lecanium corni* although most probably this parasite issued from the San Jose scale material. The last named scale produced large numbers of its primary parasite, *Prosaltella perniciosi* Tower, and it is possible that the *Azotus* may prove to be secondary upon this beneficial parasite.

Type No. 40785, United States National Museum.

Prospaltella forbesi, new species.

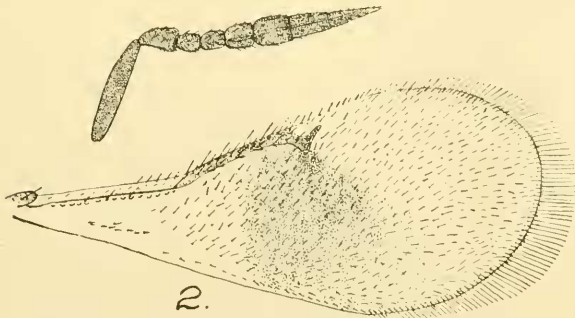
Belongs to the group of *Prospaltella* in which the last segment of the antennal club is decidedly pointed, including *murfeldtii*, *maculata*, *fasciiventris* and *fuscipennis*. Nearest to *fuscipennis* Girault but differing at once by its lack of the prominent general silvery-white color of the latter and the different infuscation of the wings.

Female.—General color light brown, the whole abdomen dusky, the basal margins of its segments slightly lighter. Antennae a uniform light brown with exception of the extreme tip of last club segment which is slightly lighter. Forewings hyaline, with a broad cloud-like infuscation across the middle; this infuscation deepest just beneath the stigmal vein. Legs not as distinctly banded as in *murfeldtii*, brown with basal and distal tips of tibiae pale.

Head wider than thorax, the latter distinctly and polygonally reticulated; mesonotum with a row of six setae running longitudinally each side of a light median longitudinal stripe, the apical pair more prominent than the others; there are three of these minute setae arranged along the upper portion and a larger seta placed farther down and near the outer margin on each side; scutellum with a prominent seta near the basal margin and another near the distal each side of the median longitudinal indication. Antennal scape longer than pedicel and first two funicle joints combined; pedicel wider and longer than first funicle joint; funicle joints increase gradually in length and width, the club tapering to a point; first club joint distinctly the largest and almost as long as the second, the apical joint the longest and tapered to a point. Forewings broad, well and uniformly covered with fine cilia except on extreme basal portion, the fringe rather short. Legs longitudinally reticulated. Ovipositor not protruding beyond tip of abdomen.

Length 1.18 mm.; expanse, exclusive of cilia, 1.75 mm.; greatest width of forewings 0.30 mm.

Male unknown.



PROSPALTELLA FORBESI.

Fig. 2.—Antenna and forewing of female *Prospaltella forbesi* Dozier, greatly enlarged.

Described from a single female mounted in balsam on slide, reared by the writer from the cherry scale, *Aspidiotus forbesi*, on bark of apple tree trunk at Camden, Delaware, April 24, 1926.

Type retained in author's collection.

PREOCCUPIED NAME IN HYMENOPTERA.

BY S. A. ROHWER, *U. S. Bureau of Entomology.*

Dr. Bradley has just called my attention to the fact that the name *propodealis* which I assigned to a species from the Philippines had previously been used by Saunders for a species which he described from Algeria in 1901. The following new name is proposed:

Scolia (*Scolia*) *luzonica*, n. n.

Scolia (*Scolia*) *propodealis* Rohwer, 1921, Phil. Journ. Sci., vol. 19, p. 83; not
Scolia (*Discolia*) *propodealis* Saunders, 1901, Trans. Ent. Soc. London,
 p. 536.

"BIOLOGICAL SPECIES" FROM THE STANDPOINT OF THE INSECT TAXONOMIST.

BY W. L. McATEE.

"Biological species" are defined as segregates that can be recognized only from knowledge of their life-history. The concept may be necessary in bacteriology where strains similar in appearance may be most certainly identified by their reactions to cultural processes, but even here, be it noted, the so differing forms are called strains, not species.

If for the sake of argument we admit that biological species may exist among insects, we would still assert that the suggestion that they should be recognized in insect taxonomy is at this date very premature. If ever necessitated, such a movement should be one of the last refinements of taxonomy, and the study of a phylum like insects where the unknown so far exceeds the known, and where in almost every group we find a wealth of structural characters which as yet have been only comparatively little studied, the introduction of a concept, so recondite, as that of biological species, seems altogether untimely and inadvisable.

The greatest advance ever made in the classification of